**Career Academy Integrated Unit Plan**

**Academy Name: ADMT/ASR/ACMT**  **School: Mainland High School**

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| Integrated Unit Plan Title: What makes a hero? |
| Courses to integrate: Drafting Illustrative Design I/Introduction to Engineering Design, Game & SIM Foundations, English I |
| Grade Level: 9th |
| Timeline & Duration: 2nd quarter |

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| Unit Summary: The academies (ADMT, ACMT, and ASR) will produce a product based on the content of The Odyssey. |

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| **Overview of Activities/Lessons per Course** | | | | |
| Course | Drafting Ill Design I/Intro to Engineering Design | Game and SIM Foundations / Introduction to IT | English I | Engineering Technology I |
| Activity/Lesson | Students will create complete Greek combat kit. | Story Board / “Alice” Simulation | Students will read The Odyssey. | Students will design and build a robot which will complete The Odyssey inspired obstacle course. |
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**Lesson Instructions for \_\_\_\_\_** Drafting Design I/Intro Engineering Design**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (course):**

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| **Standards (Performance Tasks or Course Frameworks or Sunshine State Standards ):**  **Rigor & Relevance (quadrant):** Quadrant B, 21.01, 21.02, 16.03, 16.04, 17.03 |
| **Instructions to Teacher:** Review dimensioning and sketching with students. Make sure students understand due dates. |
| **Instructions to Students:** Research the characteristics of an English town. Create a set of sketches based on your research. Use the sketches to create a complete set of working drawings. |
| **Instructions for Student Accommodations:**  Extra time as needed. Reciprocal teaching. |
| **Assessment for Activity:**  Students’ work and observation**.** |
| **Approximate Length of Time for Activity:**  3 - 4 weeks |
| **Materials Needed:**  Computer with Internet access. AutoCAD, Inventor, drafting kit, plotter. |
| **Resources Needed:** Access to the Internet. |
| Attachments: Rubric for architectural drawings. |

**Lesson Instructions for \_\_\_\_** English I **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (course):**

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| **Standards (Performance Tasks or Course Frameworks or Sunshine State Standards ):** LA.A.1.4.1, LA.A.1.4.1.2, LA.A.1.4.3,LA.A.2.4.1, LA.A.2.4.2, LA.B.1.4.1, LA.B.2.4.1, LA.D.1.4.1, LA.D.2.4.1, LA.D.2.4.2, LA.E.1.4.3,LA.E.2.4.1, LA.E.2.4.2, LA.E.2.4.6  **Rigor & Relevance (quadrant):** C |
| **Instructions to Teacher:** After think/pair/share activity, students should complete a pre-write activity explaining the characteristics of a hero. |
| **Instructions to Students:** Discuss the characteristics of a hero using think/pair/share. Complete pre-write activity about a hero’s characteristics. During the reading of The Odyssey, complete guided notes. |
| **Instructions for Student Accommodations:** Extra time as needed. |
| **Assessment for Activity:** Summative assessment, vocabulary assessment, context clues/inference activity. |
| **Approximate Length of Time for Activity:** 5 – 6 weeks. |
| **Materials Needed:** The Odyssey paperbacks, textbooks for background information about Greece, handouts with character list, guided notes. |
| **Resources Needed:** PowerPoint for background information about Greek mythology, video. |
| Attachments: NA |

**Lesson Instructions for \_\_\_\_\_** Foundations of Robotics (Engineering Technology)**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (course):**

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| **Standards (Performance Tasks or Course Frameworks or Sunshine State Standards ):**  02.03 Describe the role of decision logic in robotics  03.04 Describe tactile sensors, their operation and their role in robotics  03.05 Describe infrared sensors and their role in robotics  03.06 Differentiate between active and passive infrared sensors relative to their use in robotics  05.01 Describe how DC motors are used in robotics  06.01 Describe the steps involved in the engineering design process and the activities performed in each step.  09.01 Build a robot  09.02 Create programs as required using robotic software that will allow the robot to perform a set of tasks.  09.03 Create a flow chart that visually describes a basic robotic task.  09.04 Configure servo and motors to operate the robot.  10.01 Employ critical thinking skills independently and in teams to solve problems and make decisions.  **Rigor & Relevance (quadrant):** All |
| **Instructions to Teacher:** Review over logical decision making and mapping out decision making using flow charts. Clearly define the objective of the obstacle course along with the specific of each obstacle/objective. Review the engineering process and the methods identifying tasks and self reflection of progress. |
| **Instructions to Students:** Students will produce a robot that is able to complete The Odyssey obstacle course. Students will submit a breakdown of tasks/steps and responsibilities to complete the project, a flow chart of the robots decision making and actions. |
| **Instructions for Student Accommodations:** students will work in groups and organized so that they are able to support the team with their strengths. |
| **Assessment for Activity:** The completion of the obstacle course, the organization of the group based upon their breakdown of tasks, responsibility and daily progress. A complete flow chart of the robots logical thinking and actions. |
| **Approximate Length of Time for Activity:** the project will take approximately 4 weeks of class time spread over the 2nd quarter. |
| **Materials Needed:** Materials for construction of robots, computer for programming, RC controller, material to make the obstacle course (board) |
| **Resources Needed:** Access to programming software for robot controllers |
| Attachments: None |

**Lesson Instructions for Introduction to IT (course):**

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| **Standards (Performance Tasks or Course Frameworks or Sunshine State Standards ): 02.01, 11.01, 11.02, 14.01**  **Rigor & Relevance (quadrant):** C |
| **Instructions to Teacher:** Review simple digital storytelling software, Photostory 3. |
| **Instructions to Students:** Use Photostory 3 to produce a storyboard of the assigned portion of the odyssey. |
| **Instructions for Student Accommodations:** Extra time as needed.Partner with students as needed. |
| **Assessment for Activity:** Summative assessment, vocabulary assessment, context clues/inference activity. |
| **Approximate Length of Time for Activity:** 5 – 6 weeks. |
| **Materials Needed:** Computer, alice, photostory |
| **Resources Needed:** Internet Access |
| Attachments: NA |

**Lesson Instructions for Introduction to IT (course):**

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| **Standards (Performance Tasks or Course Frameworks or Sunshine State Standards ): 14.01, 14.02, 14.03, 01.0**  **Rigor & Relevance (quadrant):** C |
| **Instructions to Teacher:** Review simple digital storytelling software, Photostory 3/Alice |
| **Instructions to Students:** Use Photostory 3/Alice to produce a storyboard of the assigned portion of the odyssey. |
| **Instructions for Student Accommodations:** Extra time as needed.Partner with students as needed. |
| **Assessment for Activity:** Summative assessment, vocabulary assessment, context clues/inference activity. |
| **Approximate Length of Time for Activity:** 5 – 6 weeks. |
| **Materials Needed:** Computer, alice, photoshop |
| **Resources Needed:** Internet Access |
| Attachments: NA |